312-8.2 AU 357 44202
AU 0114631
FEB 1942

Domestic in 179/100.11 U.S.C.

Fig. 1.

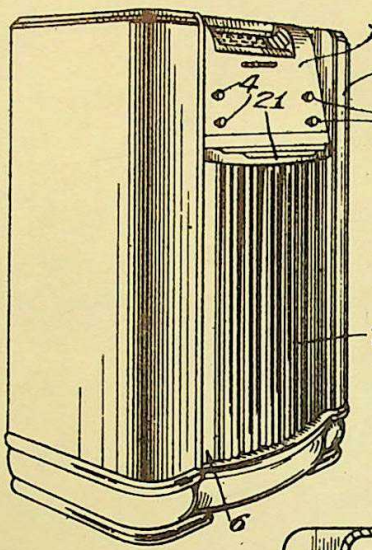


Fig. 2.

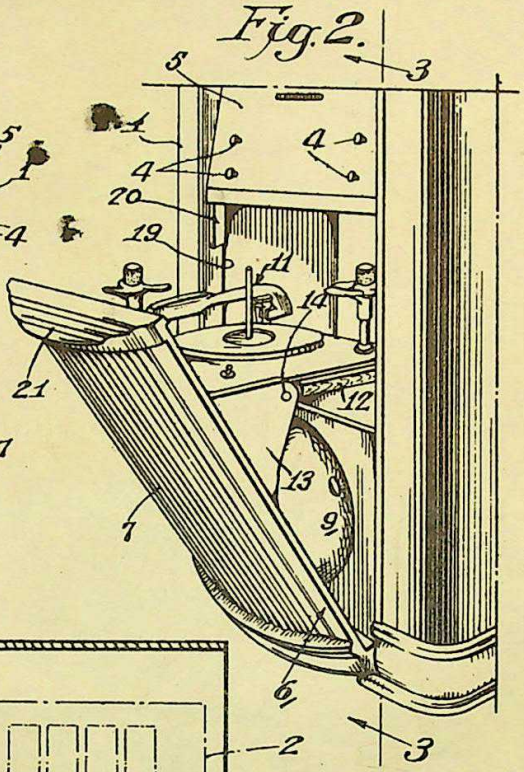
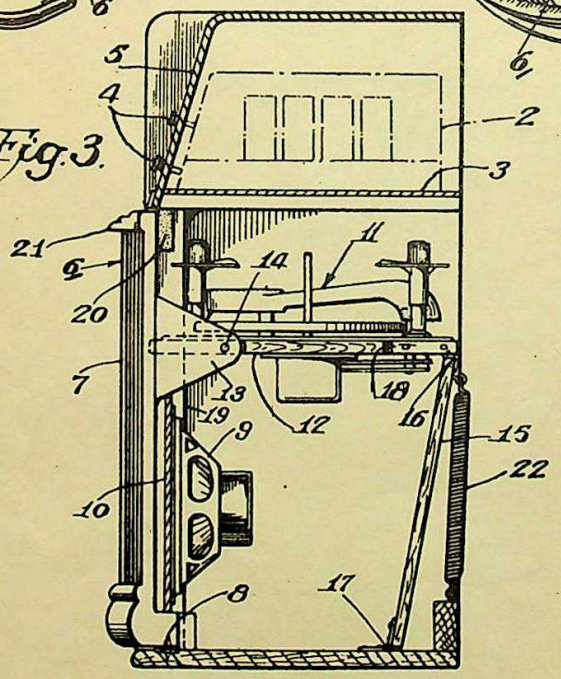


Fig. 3.



312/8.2

312
8

EXAMINERS COPY 45 8

DIV 114,631

Department of Patents. Patent Act 1903-1921. Commonwealth of Australia.

Application Date : 19th June, 1941. No. 1817/41.

Under International or Intercolonial Arrangements.

(United States of America, 20th June, 1940.)

Applicant (Assignee)	Philco Radio & Television Corporation.
Assignor	Emil Ivan Harman, of Pennsylvania, U.S.A.
Application and Complete Specification ..	Accepted, 29th January, 1942.
Acceptance Advertised (Sec. 50) ..	12th February, 1942.

Class 01.8.

Drawing attached.

COMPLETE SPECIFICATION.

"Radio-phonograph combination."

We, Philco Radio and Television Corporation of Tioga and C Streets, Philadelphia, Pennsylvania, United States of America, Radio Engineers and Distributors, hereby declare this invention and the manner in which it is to be performed to be fully described and ascertained in and by the following statement:—

This invention relates to a novel radio-phonograph combination, and more particularly to a novel cabinet-type apparatus of this class wherein the phonograph mechanism is normally disposed within and concealed by the cabinet and is movable at will to an accessible position to enable manual operations, such as the changing of records. Heretofore various forms of cabinets for radio-phonograph combinations have been proposed. One such form is a cabinet with a hinged lid to afford access to a phonograph compartment at the top. Such a cabinet is objectionable for the reason that it is generally desirable to place ornaments on the top of the cabinet and it is necessary to remove any such ornament in order to reach the control elements of the radio-phonograph combination. Another proposed form of cabinet utilizes a drawer-like structure to support the phonograph mechanism. This is objectionable in that it detracts from the appearance of the cabinet and it detrimentally affects and limits the design capabilities.

The principal object of the invention is to provide an improved radio-phonograph combination which eliminates the objections of prior devices, such as those above mentioned, and which has other advantages.

A more specific object of the invention is to provide a novel apparatus of this

737.—26/2/42.—130.—Price, 1s. 6d. post free.

character wherein the front panel of the cabinet serves both as a grille structure for the loud speaker and also as a part of a novel supporting structure for the phonograph mechanism.

Another object of the invention is to provide a novel apparatus of this character which is so constructed that the phonograph supporting structure does not interfere in any way with the design of the cabinet; and in fact such structure lends itself nicely to modern design trends and characteristics.

A further object of the invention is to provide a novel phonograph supporting structure in an apparatus of this type, the said supporting structure forming a parallelogram structure, of which the front panel of the cabinet forms an element.

Other objects and features of the invention will be apparent as the description proceeds.

In the accompanying drawings,

Figure 1 is a perspective view of the radio-phonograph combination in normal closed condition.

Figure 2 is a perspective view showing the front panel in open position and illustrating the accessibility of the phonograph mechanism when the panel is open; and

Figure 3 is a sectional view taken along line 3—3 of Fig. 2 with the front panel closed.

Referring to the several views of the drawing, the radio-phonograph combination provided by this invention comprises a cabinet 1 within which are housed both the radio receiving apparatus and the phonograph mechanism. As shown in Fig. 3, the radio receiver chassis and apparatus mounted thereon, shown diagrammatically at 2, are mounted on a horizontal shelf 3, which, together with the walls of the cabinet, forms a compartment in the upper part of the cabinet. The control knobs 4 are disposed on the inclined control panel 5 at the upper front part of the cabinet. The cabinet comprises a front panel 6 which is normally vertically disposed and which comprises a grille structure 7. As illustrated, the grille structure may comprise vertically extending elements, the design thereof being in conformity with the modern design trend and blending with the design of the cabinet as a whole. In accordance with the present invention, the panel 6 is hinged at its bottom, the hinge being shown at 8, and the panel is thus arranged for movement from its normal vertical position, shown in Figs. 1 and 3, to a forward position as shown in Fig. 2. Directly behind the grille structure of the hinged front panel, there is fixedly mounted the loud speaker 9 whose support is shown at 10. If desired, the front of the speaker may be covered with cloth or the like. As will be well understood, the loud speaker is employed in conjunction with both the radio receiver and the phonograph mechanism, the phonograph pickup being connected electrically to the audio amplifier of the radio receiver to which the loud speaker is connected.

The phonograph mechanism, designated generally by reference character 11, is mounted on a substantially horizontal shelf 12 which is normally disposed within the cabinet below the radio apparatus. The shelf 12 is movable by means of panel 6 to a forward position so as to permit access to the phonograph mechanism. To this end, there are provided on panel 6 a pair of rearwardly extending ears 13 to which the shelf is pivotally attached at 14. At the rear of the shelf 12, there is provided a supporting leg structure 15 which may comprise a single centrally disposed leg, or a plurality of legs. The leg structure is hingedly attached to the rear of the shelf 12 at 16 and is also hingedly attached to the bottom of the cabinet at 17. It will be noted that the hinge or pivot points 8, 14, 16 and 17 form substantially a parallelogram structure which normally leans toward the rear of the cabinet when the front panel is vertical, as shown in Fig. 3. This rearwardly leaning parallelogram structure is made possible by the ears 13 which fix the pivot point 14 rearwardly of the panel 6 and its hinge 8. The leaning disposition of the parallelogram structure maintains the entire support structure in normal position. When the said structure is moved to its outer position, the parallelogram leans forwardly and maintains the structure in that position.

Thus, it will be seen that the panel 6, the shelf 12, and the supporting leg structure 15, form with the bottom of the cabinet a parallelogram structure which is adjustable from the position of Fig. 3 to the position of Fig. 2, or vice versa, to permit access to the phonograph mechanism. In order to limit the forward movement of this supporting structure, and also to cushion the same, there are provided on the opposite sides of the shelf 12 at the rear thereof resilient cushions 18 which are adapted to abut against the inner part of the stationary framework 19 adjacent the front cabinet opening. These cushioning members may be formed of rubber or like material. Likewise, to limit the rearward movement of the support structure, there are provided resilient cushions or stops 20 against which the upper edge portions of the front panel abut. The upper portion 21 of the panel may be formed to facilitate grasping thereof.

It is important to note that the disposition of the pivots 14 rearwardly of the front panel by means of ears 13 does not interfere with the accessibility of the phonograph but rather permits free access to substantially the entire shelf area. As may be seen in Figs. 2 and 3, the ears 13 do not obstruct the shelf area nor interfere in any way with accessibility of the phonograph. When the support structure is open, the upper edges of ears 13 are substantially aligned with the shelf and enable free access thereto. Moreover, the upper portion of the front panel above the shelf 12 moves away from the shelf and permits greater freedom of access to the shelf, particularly the front portion thereof.

A further important feature is the open-side construction of the support structure. Since the front panel has no side extensions, other than the ears 13, the support structure is entirely open at the sides of the phonograph, when the support structure is in the open position. This also provides free access to the phonograph and provides ample space for manual manipulations, such as the changing of records. Moreover, the employment of ears 13 enhances this open-side feature, since they enable greater side space between the open panel and the front of the cabinet.

Thus, it will be seen that the invention provides a novel structure in which the front panel of the cabinet serves a dual purpose and also permits the necessary latitude of design. The grille elements 7 are unbroken and extend the full vertical length of the panel, thus conforming with modern design trends and presenting a pleasing appearance. Moreover, the grille structure of the front panel is enabled to perform its normal function in conjunction with the loud speaker, and the speaker does not interfere in any way with the phonograph supporting structure. The complete assembly is compact, simple and economical to manufacture and assemble. Further, the phonograph is normally entirely concealed within the cabinet, but the novel supporting structure permits ready access to the phonograph.

If desired, suitable means may be provided to facilitate manual operation of the support structure and to render such operation smoother and less susceptible to abrupt stops or jolts tending to disturb the position of the phonograph tone arm. As illustrated in Fig. 3, a counter-balancing spring 22 may be connected between a stationary part of the cabinet and the movable support structure. Preferably this spring is arranged as illustrated and is normally under little or no tension. When the support structure is moved forward, the spring is placed under tension and resists abrupt movement. When the support is in its forward position, the tension of the spring is a maximum and it facilitates movement of the support from that position. Since the tension of the spring diminishes with rearward movement of the support, the spring exerts very little force after the support has moved sufficiently to shift its center of gravity to the rear of "dead center" position. Consequently, the spring has little or no tendency to pull the support structure abruptly to its rearward normal position.

Furthermore, as may be seen from Figs. 2 and 3, the structure is preferably designed and arranged to move forward further from the "dead center" position than it moves rearward from said position, so as to permit maximum accessibility of

the phonograph in the forward position. As a result, the center of gravity is shifted further forward of said position than it is rearward of said position, and greater manual force would be necessary to move the support from its forward position than that required to move it from its rearward position were it not for the spring 22. The spring, exerting little or no force when the support is at its rearward position and exerting substantial force when the support is at its forward position, makes it possible to move the support from its forward position by exerting substantially the same manual force as that required to move the support from its rearward position. Such manual force is relatively small. Thus the preferred structure in conjunction with the spring has the added advantage that the manual forces are balanced and minimized.

While a single preferred embodiment of the invention has been illustrated for the purpose of disclosure, it will be understood that various modifications of the invention are possible without departing from its scope.

Having now fully described and ascertained our said invention and the manner in which it is to be performed we declare that what we claim is:—

1. In combination, a cabinet provided with a front wall including a panel hinged at its bottom so as to swing outwardly from the general plane of said front wall to an inclined position at an acute angle to said plane; a radio receiver fixedly mounted in said cabinet, said radio receiver including an audio amplifier; a loud speaker mounted in said cabinet; a substantially horizontal shelf attached to said panel and extending rearwardly therefrom, whereby said shelf is drawn through the front wall opening of the cabinet when said panel is swung outwardly; means arranged cooperatively with said panel to support said shelf and permitting movement of said shelf as aforementioned; and a phonograph mounted on said shelf and including an electrical translating device having operative connection with said audio amplifier.

2. In combination, a cabinet provided with a stationary panel in the upper front portion thereof, a horizontal support member at the rear of said panel, a radio receiver carried by said support member and having controls extending through said stationary panel, a relatively large grille panel forming a portion of the front of said cabinet, said grille panel being hinged near its bottom so as to swing outwardly from the general plane of the front wall of said cabinet to an inclined position, a substantially horizontal shelf supported within said cabinet and extending rearwardly of said grille panel, said shelf being hingedly attached to the rear of said grille panel and being movable therewith, and a phonograph mechanism mounted on said shelf, whereby said grille panel is operable to move said phonograph from a concealed position within said cabinet to an exposed position for the manual operation thereof.

3. In combination, a cabinet provided with a front wall comprising an upper stationary panel and a relatively large grille panel hinged at its bottom so as to swing outwardly from the general plane of said front wall to an inclined position at an acute angle to said plane; a radio receiver fixedly mounted in said cabinet behind said stationary panel, said radio receiver including an audio amplifier; a loud speaker mounted in said cabinet behind said grille panel; a substantially horizontal shelf attached to said grille panel and extending rearwardly therefrom, whereby said shelf is drawn through the front wall opening of the cabinet when said grille panel is swung outwardly; means arranged cooperatively with said grille panel to support said shelf and permitting movement of said shelf as aforementioned; and a phonograph mounted on said shelf and including an electrical translating device having operative connection with said audio amplifier.

4. In combination, a cabinet provided with a front wall comprising an upper stationary panel and a relatively large grille panel hinged at its bottom so as to swing outwardly from the general plane of said front wall to an inclined position at an acute angle to said plane; a radio receiver fixedly mounted in said cabinet behind said stationary panel, said radio receiver including an audio amplifier; a

loud speaker mounted in said cabinet behind said grille panel; a substantially horizontal shelf extending rearwardly of said grille panel and pivotally connected thereto, whereby said shelf is drawn through the front wall opening of the cabinet when said grille panel is swung outwardly; a rear support for said shelf hingedly attached to the shelf and to the bottom of the cabinet, the pivot and hinge joints of the shelf-supporting structure forming a rearwardly leaning parallelogram when said grille panel is closed, thus maintaining the movable structure comprising the grille panel, shelf and rear support in normal position; a spring connected between said movable structure and a stationary part of the cabinet and arranged to facilitate movement of said movable structure, said spring being under minimum tension when said movable structure is in normal position and being placed under increasing tension as said movable structure is moved forwardly; means for limiting the forward movement of said movable structure; and a phonograph mounted on said shelf and including an electrical translating device having operative connection with said audio amplifier.

5. A radio-phonograph combination, comprising a console-type cabinet having a compartment in the upper part thereof; a stationary panel at the front of said compartment; a radio receiver in said compartment; control means for said radio receiver on said stationary panel; a relatively large front panel disposed below said first-mentioned panel and hingedly mounted at its bottom edge to swing outwardly from a closed position in which it blends with the cabinet to an open position in which it is disposed at an acute

angle to the vertical, said hinged panel having a grille structure embodied therein; a substantially horizontal shelf hingedly attached to said hinged panel and normally disposed within said cabinet below said upper compartment when said hinged panel is in its closed position; means arranged cooperatively with said hinged panel to support said shelf and permitting movement of said shelf exteriorly of said cabinet when said hinged panel is moved to an open position; a phonograph mechanism mounted on said shelf and being freely accessible when said hinged panel is in open position, said phonograph being electrically connected to a portion of said radio receiver; and a loud speaker mounted within said cabinet below said shelf in a position to be directly behind the grille structure of said hinged panel when the latter is in closed position.

6. A radio-phonograph combination as defined in Claim 5 wherein the substantially horizontal shelf is hingedly attached to the hinged panel at an appreciable distance below the upper edge of said panel, the portion of said panel above said shelf moving away from said shelf as said panel moves outwardly, to thereby increase the accessibility of said phonograph mechanism when said hinged panel is in open position.

Dated this 11th day of June, A.D. 1941.

PHILCO RADIO AND TELEVISION CORPORATION,

By its Patent Attorney,

ARTHUR S. CAVE,

Fellow Institute Patent Attorneys of Australia.

Witness—L. R. Lyle.

Printed and Published for the DEPARTMENT OF PATENTS, COMMONWEALTH OF AUSTRALIA, by L. F. JOHNSTON, Commonwealth Government Printer, Canberra.